



Summary of Brazos G Region

Stretching from the piney woods of Grimes County in the southeast to the rolling plains of Kent County in the northwest, the Brazos G Regional Water Planning Area includes all or parts of 37 counties (Figure G.1). Over 90 percent of the region lies within the Brazos River Basin, with the Brazos River being the region's primary source of water. The largest economic sectors in the region are service, manufacturing, and retail trade. Major cities in the region include Abilene, Bryan, College Station, Killeen, Round Rock, Temple, and Waco. The members of the Brazos G Planning Group are listed on the last page of this summary.

Population and Water Demands

Approximately 8 percent of the state's 2010 population is projected to reside in the Brazos G Region, and between 2010 and 2060 the region's population is projected to increase 77 percent to 3,332,100 (Figure G.2). Its water demands, however, will increase less dramatically. By 2060, the total water demands for the region are projected to increase 38 percent, from 835,691 acre-feet in 2010 to 1,150,973 acre-feet (Figure G.3). Municipal water use makes up the largest share of these demands in all decades and is projected to expe-

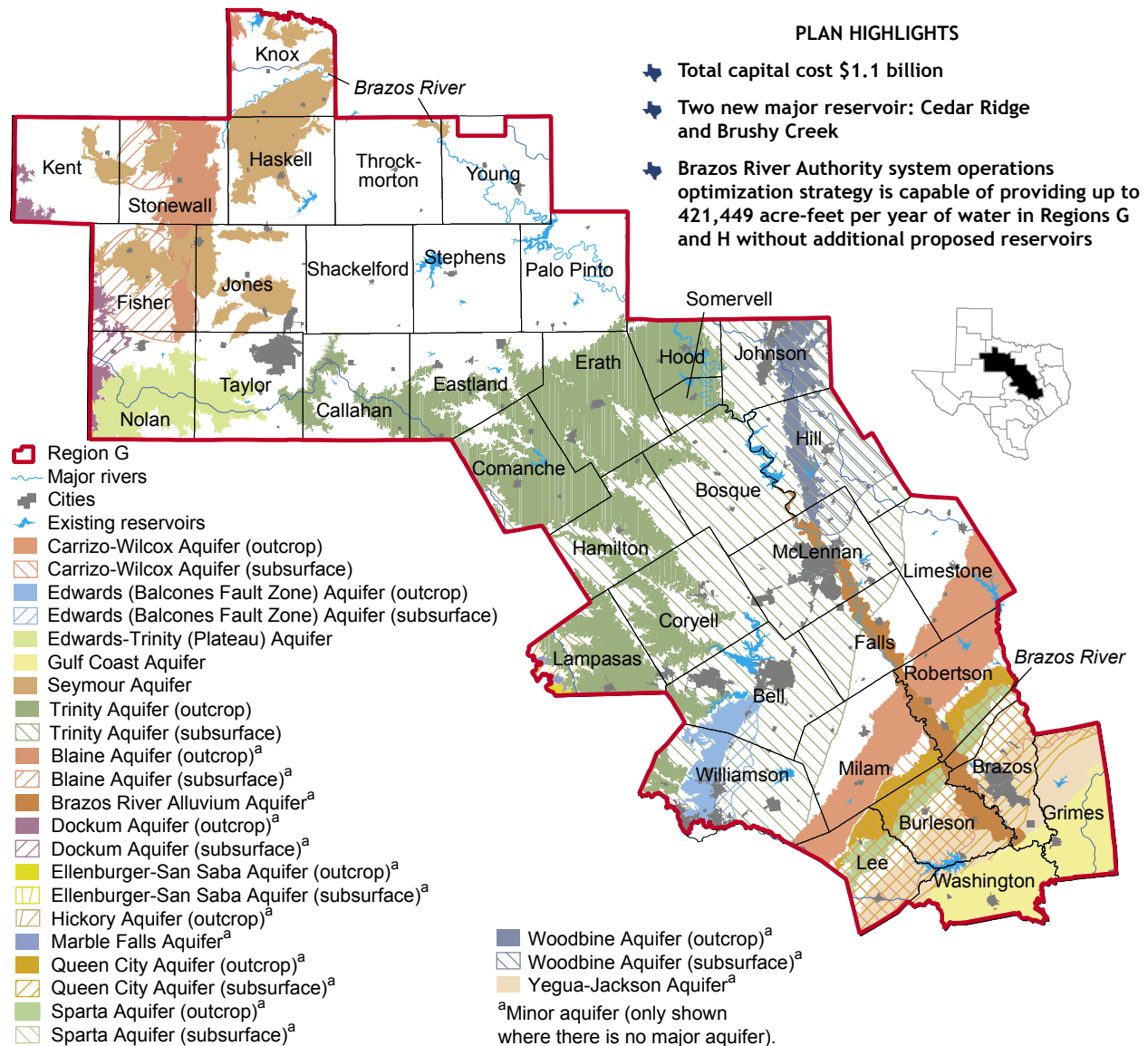


Figure G.1. Brazos G Region.

rience the greatest increase, from 311,581 acre-feet in 2010 to 547,028 acre-feet in 2060—a 76 percent increase (Table G.1). Manufacturing and steam-electric power generation demands are also projected to grow significantly from 2010 to 2060, by 61 percent (from 19,787 acre-feet to 31,942 acre-feet) and 64 percent (from 147,734 acre-feet to 242,344 acre-feet), respectively. Irrigation water demand, however, declines 10 percent, from 232,541 acre-feet in 2010 to 208,386 acre-feet in 2060, because of projected reductions in irrigated land and technological advances in irrigation techniques.

Existing Water Supplies

The region has a large number of surface water and groundwater supply sources, with over three-fourths of the existing water supply in the Brazos G Region associated with surface water (Table G.2). The principal surface water sources are the Brazos River, its tributaries, and the 41 major reservoirs throughout the region. There are six major aquifers in the region: the Seymour and Edwards-Trinity (Plateau) aquifers in the western portion of the region, the Trinity and Edwards (Balcones Fault Zone) aquifers in the central portion, and the Carrizo-Wilcox and Gulf Coast aquifers in the eastern portion. By 2060, the total surface water and groundwater supply is projected to decline 3 percent, from 1,150,098 acre-feet in 2010 to approximately 1,112,155 acre-feet. This projected decline in water supply is due to both reservoir sedimentation and a greater emphasis on sustainable use of groundwater resources in the region.

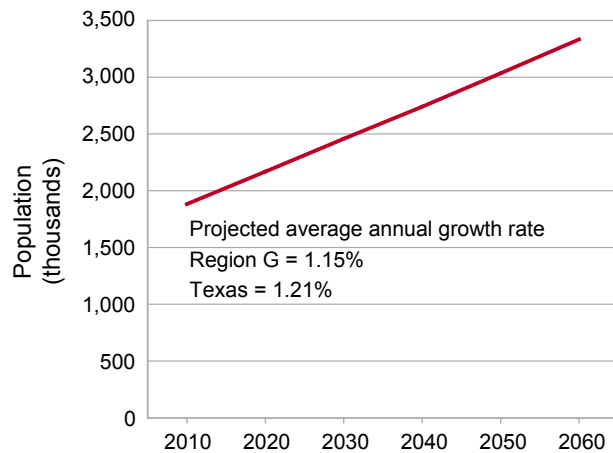


Figure G.2. Projected population for 2010-2060.

Needs

Although on a regionwide basis it might appear that the Brazos G Region has enough water supply to meet demands through 2050, with only a small deficit in 2060, the total water supply volume is not accessible to all water users throughout the region (Figure G.4). Consequently, in the event of drought, Region G is projected to have a total water supply need of 141,800 acre-feet by 2010 (Table G.3). Irrigation accounts for nearly half of those needs at 65,303 acre-feet. By 2060, overall water needs are expected to increase to 347,804 acre-feet per year, with almost half of this need associated with municipal users.

Table G.1. Projected water demands for 2010-2060

Category	2010 (acre-feet)	2060 (acre-feet)	Percent change in demand 2010-2060	Percent of overall demand in 2010	Percent change in relative share of overall demand, 2010-2060
Municipal	311,581	547,028	+76	+37	+10
County-other	35,808	48,454	+35	+4	0
Manufacturing	19,787	31,942	+61	+2	0
Mining	36,664	21,243	-42	+4	-3
Irrigation	232,541	208,386	-10	+28	-10
Steam-electric	147,734	242,344	+64	+18	+3
Livestock	51,576	51,576	0	+6	-2
Region	835,691	1,150,973	+38		

Figure G.3. Projected total water demand and existing water supplies for 2010-2060.

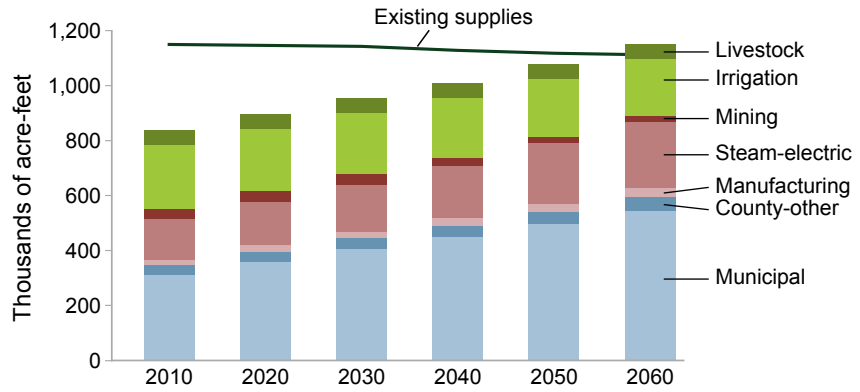


Figure G.4. Projected water needs for 2010-2060.

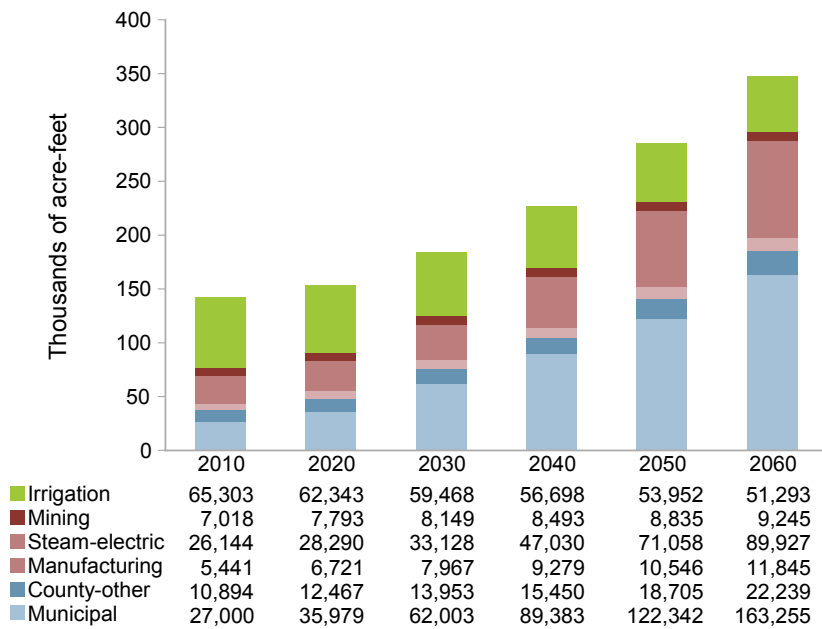


Figure G.5. Recommended water management strategy water supply volumes for 2010-2060.

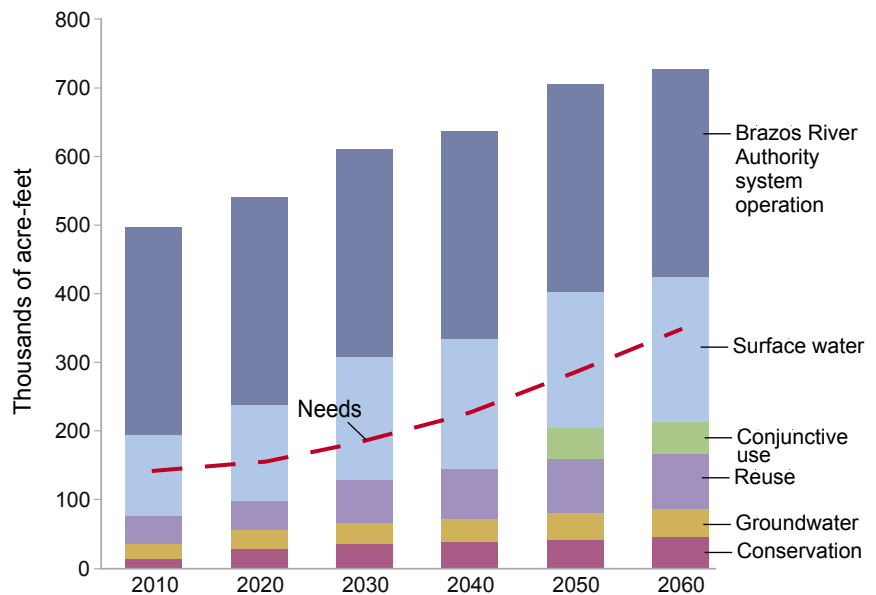


Table G.2. Existing water supplies for 2010 and 2060

Water supply source	2010 (acre-feet)	2060 (acre-feet)
Surface water		
Brazos River Authority Little River system	202,132	199,658
Brazos River Authority main stem system	184,130	184,130
Brazos River combined run-of-river irrigation	170,200	170,475
Lake Waco	78,969	78,969
Livestock local supply	51,576	51,576
Colorado River combined run-of-river—LCRA supply reallocation	23,830	23,857
Brazos River run-of-river	22,921	22,930
Brazos River Authority Aquilla system	10,360	4,982
Hubbard Creek Lake	10,225	10,004
Leon River run-of-river	10,097	10,097
Other surface water	105,901	100,795
Surface water subtotal	870,341	857,473
Groundwater		
Carrizo-Wilcox Aquifer	108,531	93,967
Trinity Aquifer	63,424	61,829
Seymour Aquifer	52,709	51,641
Brazos River Alluvium Aquifer	20,067	12,511
Edwards (Balcones Fault Zone) Aquifer	11,200	11,200
Other groundwater	23,826	23,534
Groundwater subtotal	279,757	254,682
Region total	1,150,098	1,112,155

Note: Water supply sources are listed individually if 10,000 acre-feet per year or greater in 2010. Only includes supplies that are physically and legally available to users during a drought of record.

Recommended Water Management Strategies and Cost

The Brazos G Planning Group recommended a variety of water management strategies that would provide more water than is required to meet future needs. In all, the strategies would provide 736,032 acre-feet of additional water supply by the year 2060 (Figure G.5) at a **total capital cost of \$1,076,323,034** (Appendix 2.1). Some of this water could be made available to other regions with needs. Because there were no economically feasible strategies identified to meet their needs, **five counties in the region have unmet irrigation needs (37,273 acre-feet per year)**.

Conservation Recommendations

Conservation strategies represent 6 percent of the total volume of water associated with all recommended strategies. Water conservation was recommended for every municipal water user group that had both a need and a gallons per capita per day use greater than 140 gallons. The plan rec-

ommends that all nonmunicipal water user groups with needs reduce their water use through conservation by 3, 5, and 7 percent in 2010, 2020, and 2030, respectively.

Ongoing Issues

The planning group continues to be concerned about the methods of estimating groundwater availability and the separate release of draft population and water demand projections for review.

Select Policy Recommendations

- Encourage more active participation by state natural resource agencies in the water planning process
- Improve coordination between groundwater conservation districts and the planning group to ensure the sustainable use of groundwater
- Develop a more efficient and cost-effective process to amend the regional water plan

Table G.3. Water needs (acre-feet per year) by county and type of use in years 2010 and 2060

County	Total		Municipal		County-other		Manufacturing		Steam-electric		Mining		Irrigation		Livestock	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
Bell	1,337	4,579	374	3,133	-	-	963	1,446	-	-	-	-	-	-	-	-
Bosque	2,111	10,910	342	468	543	919	641	1,300	585	8,223	-	-	-	-	-	-
Brazos	1	13,815	-	13,581	-	-	1	234	-	-	-	-	-	-	-	-
Burleson	4,720	3,123	-	34	-	-	-	98	-	-	-	-	4,720	2,991	-	-
Callahan	49	26	49	26	-	-	-	-	-	-	-	-	-	-	-	-
Comanche	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coryell	1,412	4,104	38	1,328	1,374	2,776	-	-	-	-	-	-	-	-	-	-
Eastland	9,488	9,404	17	-	299	147	-	-	-	-	-	-	9,172	9,257	-	-
Erath	-	40	-	-	-	-	-	40	-	-	-	-	-	-	-	-
Falls	447	603	189	603	258	-	-	-	-	-	-	-	-	-	-	-
Fisher	167	269	75	33	-	-	92	236	-	-	-	-	-	-	-	-
Grimes	247	10,921	246	1,017	-	-	1	189	-	9,715	-	-	-	-	-	-
Hamilton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haskell	29,198	22,469	337	472	-	-	-	-	-	-	56	47	28,805	21,950	-	-
Hill	320	1,040	320	987	-	-	-	53	-	-	-	-	-	-	-	-
Hood	180	3,683	133	101	19	3,543	3	15	-	-	25	24	-	-	-	-
Johnson	10,827	39,890	5,285	31,759	2,323	2,977	1,762	3,639	1,200	1,200	257	315	-	-	-	-
Jones	588	507	588	507	-	-	-	-	-	-	-	-	-	-	-	-
Kent	22	3	-	-	22	3	-	-	-	-	-	-	-	-	-	-
Knox	15,615	10,951	248	466	21	22	-	-	-	-	3	3	15,343	10,460	-	-
Lampasas	168	1,037	-	-	31	845	111	169	-	-	26	23	-	-	-	-
Lee	305	1,279	305	1,279	-	-	-	-	-	-	-	-	-	-	-	-
Limestone	40	15,970	-	87	-	-	40	69	-	15,814	-	-	-	-	-	-
McLennan	32,248	46,980	2,881	4,670	5,596	6,786	784	1,508	22,987	34,016	-	-	-	-	-	-
Milam	883	8,382	3	182	-	-	-	-	880	8,200	-	-	-	-	-	-
Nolan	5,901	7,533	2,014	1,710	31	4	-	239	492	2,817	200	197	3,164	2,566	-	-
Palo Pinto	26	2,318	-	23	26	637	-	-	-	1,658	-	-	-	-	-	-
Robertson	6	8,386	6	25	-	-	-	77	-	8,284	-	-	-	-	-	-
Shackelford	111	81	-	-	-	-	-	-	-	-	-	-	111	81	-	-
Somervell	241	353	-	-	133	261	2	7	-	-	106	85	-	-	-	-
Stephens	5,253	6,856	-	-	218	193	-	-	-	-	5,035	6,663	-	-	-	-
Stonewall	7	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Taylor	12,753	12,656	12,748	12,652	-	-	-	-	-	-	5	4	-	-	-	-
Throckmorton	3,988	3,988	-	-	-	-	-	-	-	-	-	-	3,988	3,988	-	-
Washington	-	199	-	-	-	-	-	199	-	-	-	-	-	-	-	-
Williamson	3,141	95,449	795	88,112	-	-	1,041	2,327	-	-	1,305	1,884	-	-	-	-
Young	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Region	141,800	347,804	27,000	163,255	10,894	22,239	5,441	11,845	26,144	89,927	7,018	9,245	65,303	51,293	-	-

SELECT MAJOR WATER MANAGEMENT STRATEGIES

(Dollar amounts are rounded. See Appendix 2.1 for all recommended strategies and actual costs.)

- ✦ *Brazos River Authority system operation strategy would initially provide 50,866 acre-feet allocated to Region G water users in Bosque, Grimes, Hill, Johnson, and Limestone counties and 118,714 acre-feet allocated to Region H (see Figure H.5). Depending upon basinwide return flows and diversion locations, the Brazos River Authority system operation strategy could provide up to 421,449 acre-feet per year—Implementation by: 2010; Capital Cost: \$62 million.*
- ✦ *Cedar Ridge Reservoir on the Clear Fork of the Brazos River would yield 34,520 acre-feet per year to be used by Abilene and irrigated agriculture in Throckmorton County—Implementation by: 2010; Capital Cost: \$83 million.*
- ✦ *Conveyance of 49,650 acre-feet per year of surface water from Lake Travis to Cedar Park, Leander, Round Rock, and Chisholm Trail Utility District—Implementation by: 2020; Capital Cost: \$202 million.*
- ✦ *Lake Granger conjunctive use project would produce 54,390 acre-feet per year to be used by multiple entities in Williamson County—Implementation by: 2050; Capital Cost: \$303 million.*

Brazos G Planning Group Members and Interests Represented

Voting members during adoption of 2006 Regional Water Plan:

Scott Mack (Chair), public; Jon Burrows, counties; Tom Clark, municipalities; Alva Cox, municipalities; Scott Diermann, electric generating utilities; Tim Fambrough, counties; Phil Ford, river authorities; Horace R. Grace, small business; Terry Kelley, water districts; Mike McGuire, water districts; Tommy O'Brien, municipalities; Dale Spurgin, agriculture; Stephen L. Stark, environmental; Wiley Stem III, municipalities; Mike Sutherland, counties; Randy Waclawczyk, industries; Kent Watson, water utilities; Kathleen Webster, water districts; Wayne Wilson, agriculture

Former voting members during 2001-2006 planning cycle:

Truman Blum, municipalities; Mark Bryson, industries; Tony Jones, counties; A.V. Jones, water districts; James Nuse, municipalities; David Purdue, counties; Steve Sanford, agriculture; Ken Smith, electric generating utilities; Chaunce Thompson, agriculture